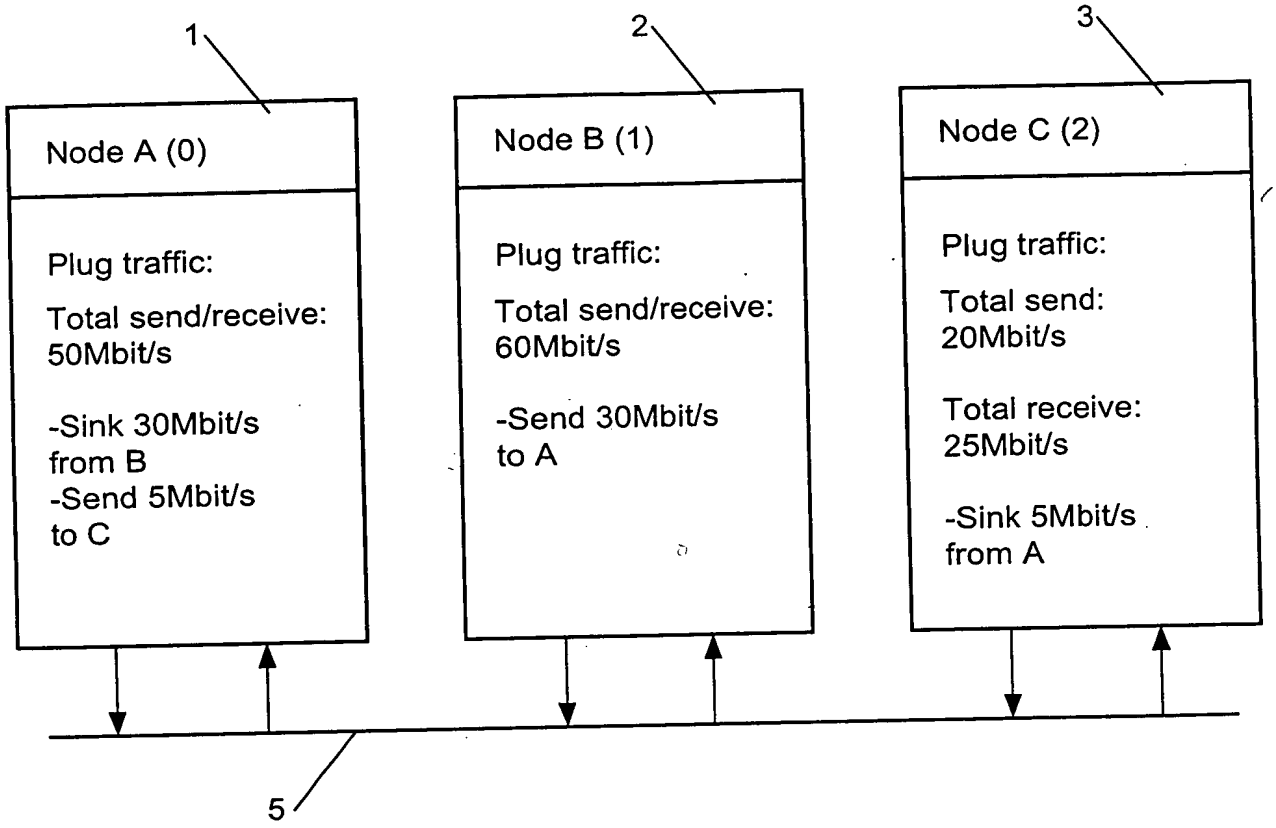
1
2
3
Node A (0)
Plug traffic:
Total send/receive:
50Mbit/s
-Sink 30Mbit/s
from B
-Send 5Mbit/s
to C
Node B (1)
Plug traffic:
Total send/receive:
60Mbit/s
-Send 30Mbit/s
to A
Node C (2)
Plug traffic:
Total send:
20Mbit/s
Total receive:
25Mbit/s
-Sink 5Mbit/s
from A
5

Fig. 1

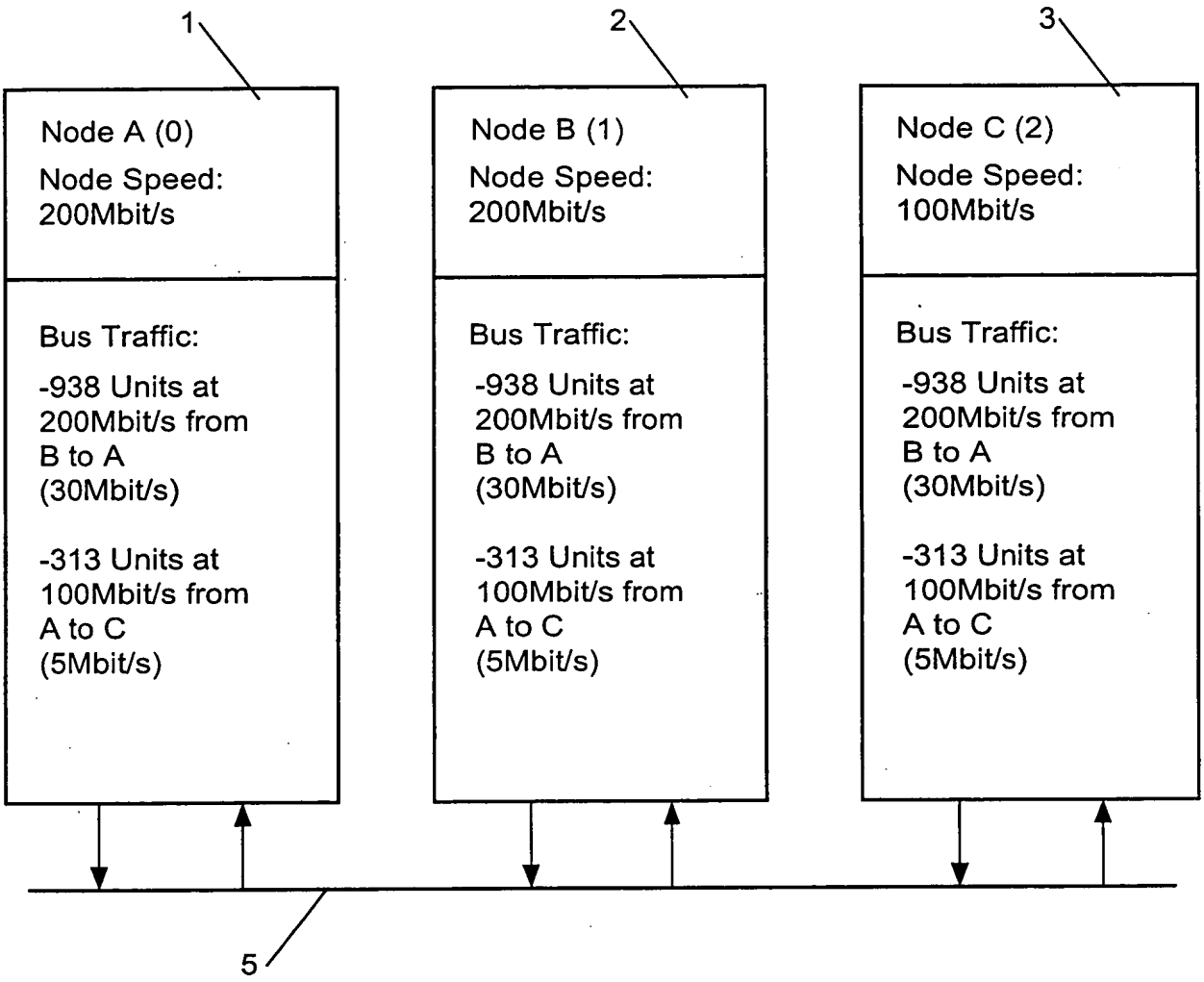
1
2
3
Node A (0)
Node Speed:
200Mbit/s
Node B (1)
Node Speed:
200Mbit/s
Node C (2)
Node Speed:
100Mbit/s
Bus Traffic:
-938 Units at 200Mbit/s from B to A (30Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
Bus Traffic:
-938 Units at 200Mbit/s from B to A (30Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
Bus Traffic:
-938 Units at 200Mbit/s from B to A (30Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
5

Fig. 2

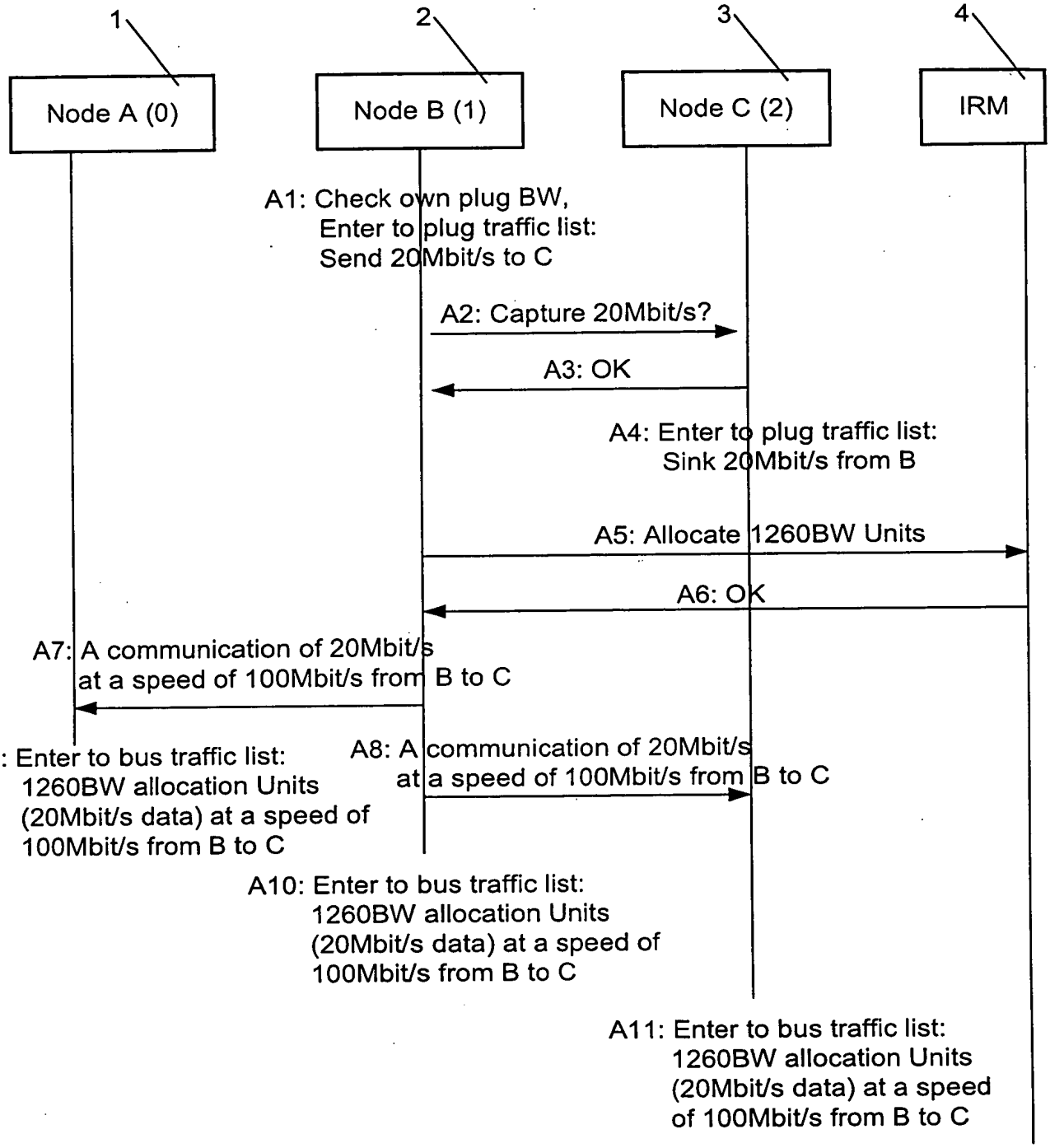
1
2
3
4
Node A (0)
Node B (1)
Node C (2)
IRM
A1: Check own plug BW,
Enter to plug traffic list:
Send 20Mbit/s to C
A2: Capture 20Mbit/s?
A3: OK
A4: Enter to plug traffic list:
Sink 20Mbit/s from B
A5: Allocate 1260BW Units
A6: OK
A7: A communication of 20Mbit/s
at a speed of 100Mbit/s from B to C
A8: A communication of 20Mbit/s
at a speed of 100Mbit/s from B to C
A9: Enter to bus traffic list:
1260BW allocation Units
(20Mbit/s data) at a speed of
100Mbit/s from B to C
A10: Enter to bus traffic list:
1260BW allocation Units
(20Mbit/s data) at a speed of
100Mbit/s from B to C
A11: Enter to bus traffic list:
1260BW allocation Units
(20Mbit/s data) at a speed
of 100Mbit/s from B to C

Fig. 3

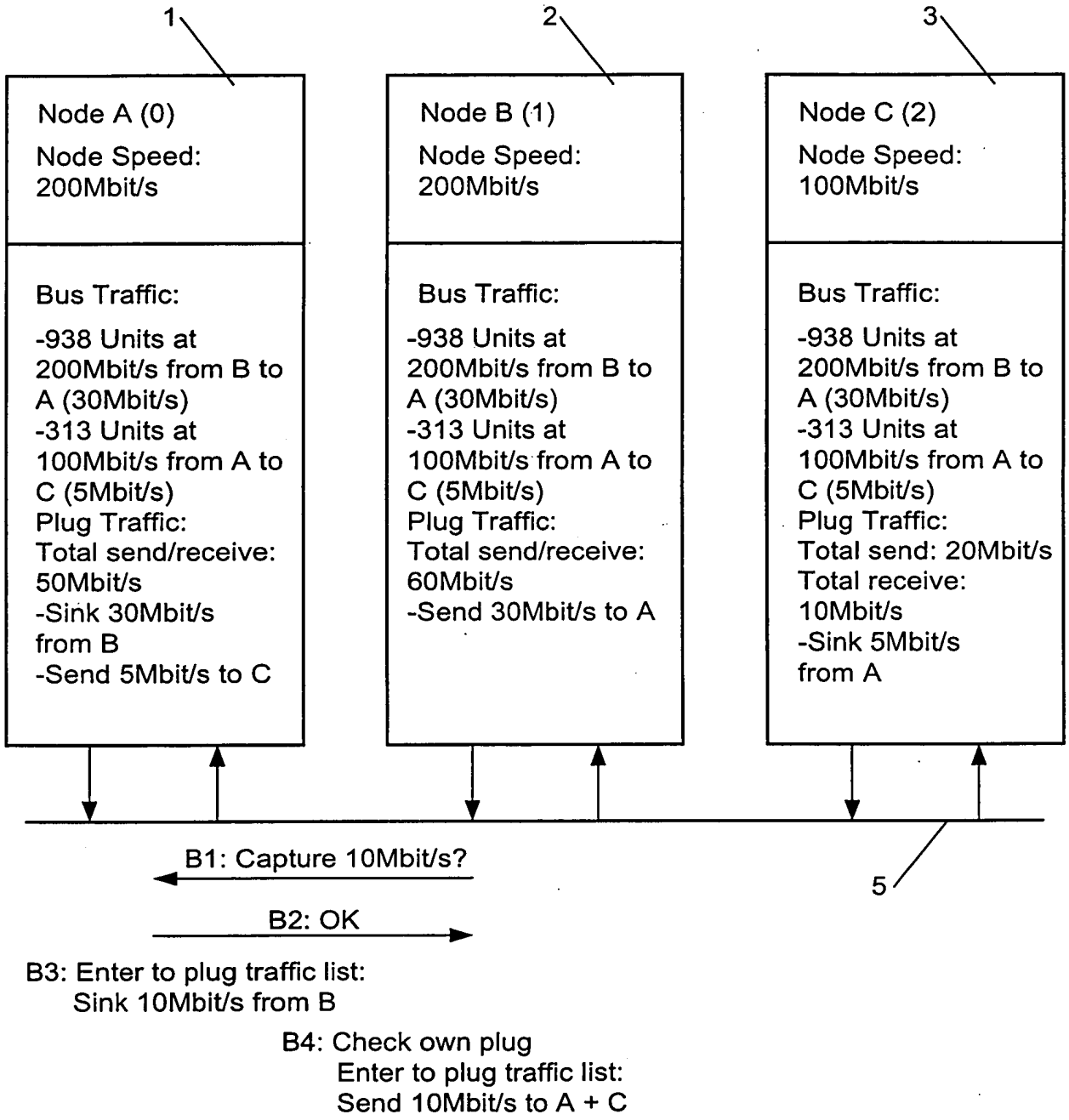
1
2
3
Node A (0)
Node Speed:
200Mbit/s
Node B (1)
Node Speed:
200Mbit/s
Node C (2)
Node Speed:
100Mbit/s
Bus Traffic:
-938 Units at 200Mbit/s from B to A (30Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
Plug Traffic:
Total send/receive: 50Mbit/s
-Sink 30Mbit/s from B
-Send 5Mbit/s to C
Bus Traffic:
-938 Units at 200Mbit/s from B to A (30Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
Plug Traffic:
Total send/receive: 60Mbit/s
-Send 30Mbit/s to A
Bus Traffic:
-938 Units at 200Mbit/s from B to A (30Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
Plug Traffic:
Total send: 20Mbit/s
Total receive: 10Mbit/s
-Sink 5Mbit/s from A
5
B1: Capture 10Mbit/s?
B2: OK
B3: Enter to plug traffic list:
Sink 10Mbit/s from B
B4: Check own plug
Enter to plug traffic list:
Send 10Mbit/s to A + C

Fig. 4(a)

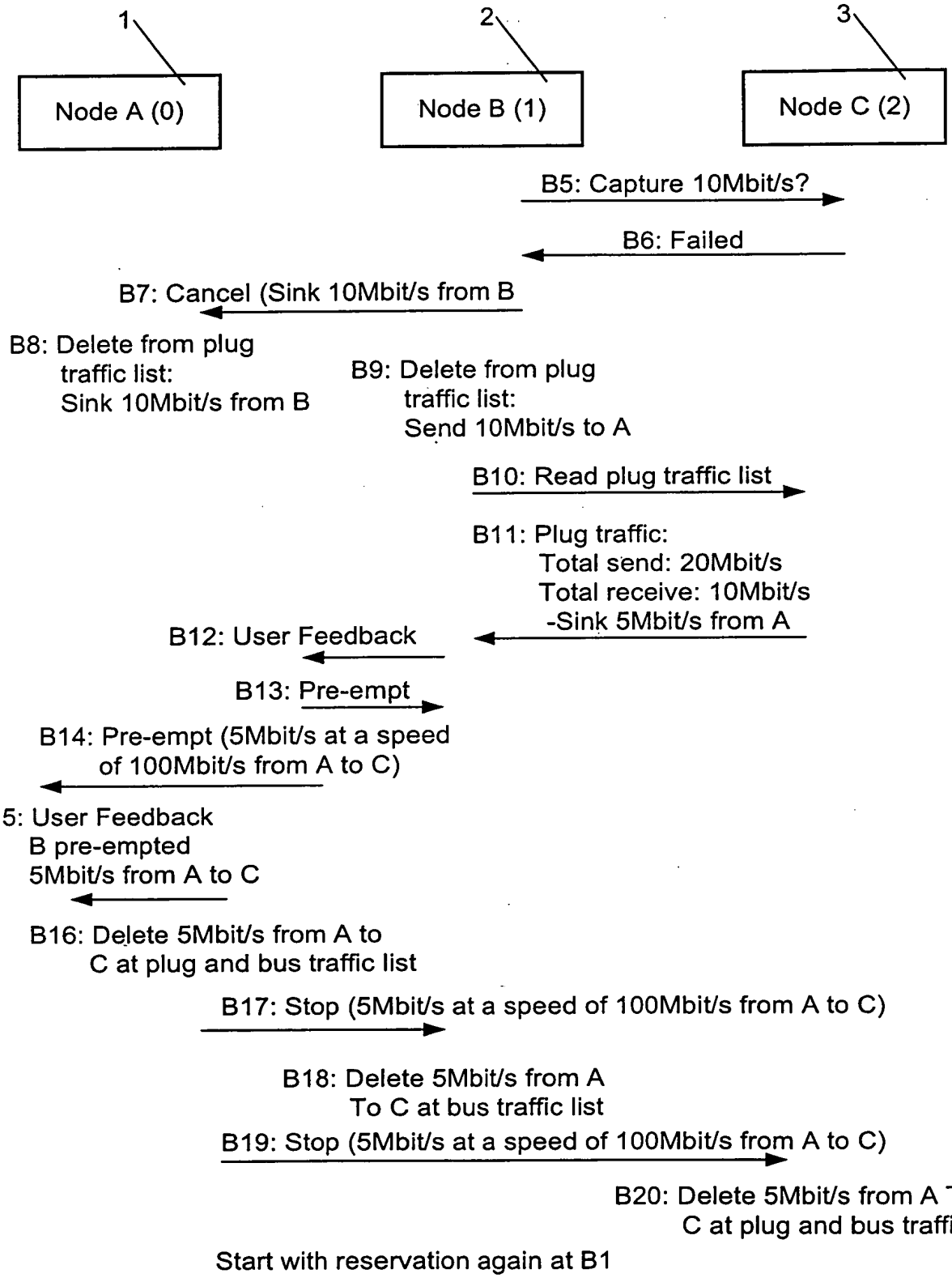
1
2
3
Node A (0)
Node B (1)
Node C (2)
B5: Capture 10Mbit/s?
B6: Failed
B7: Cancel (Sink 10Mbit/s from B
B8: Delete from plug traffic list: Sink 10Mbit/s from B
B9: Delete from plug traffic list: Send 10Mbit/s to A
B10: Read plug traffic list
B11: Plug traffic: Total send: 20Mbit/s Total receive: 10Mbit/s -Sink 5Mbit/s from A
B12: User Feedback
B13: Pre-empt
B14: Pre-empt (5Mbit/s at a speed of 100Mbit/s from A to C)
B15: User Feedback B pre-empted 5Mbit/s from A to C
B16: Delete 5Mbit/s from A to C at plug and bus traffic list
B17: Stop (5Mbit/s at a speed of 100Mbit/s from A to C)
B18: Delete 5Mbit/s from A To C at bus traffic list
B19: Stop (5Mbit/s at a speed of 100Mbit/s from A to C)
B20: Delete 5Mbit/s from A To C at plug and bus traffic list
Start with reservation again at B1

Fig. 4(b)

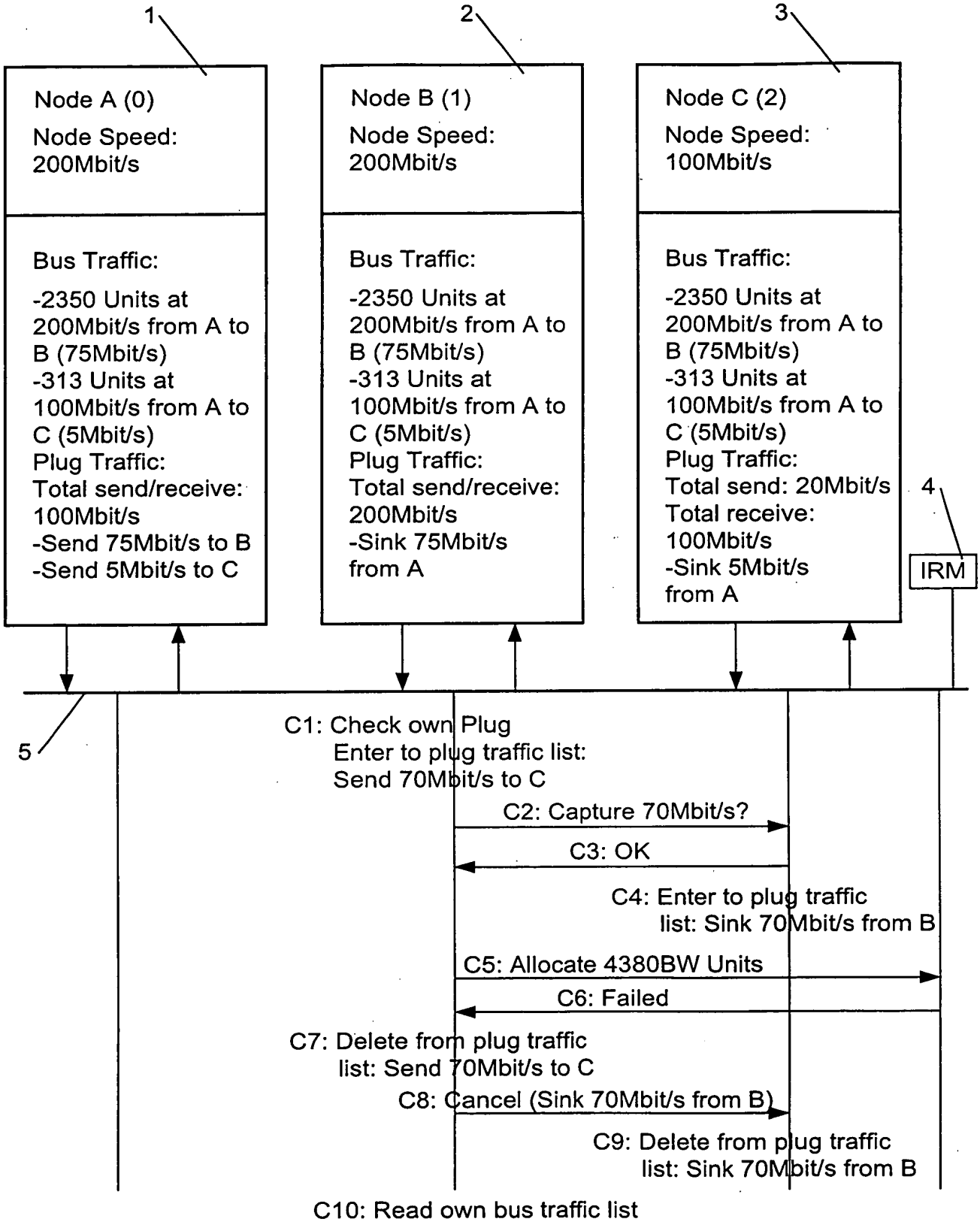
1
2
3
Node A (0)
Node Speed:
200Mbit/s
Node B (1)
Node Speed:
200Mbit/s
Node C (2)
Node Speed:
100Mbit/s
Bus Traffic:
-2350 Units at 200Mbit/s from A to B (75Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
Plug Traffic:
Total send/receive: 100Mbit/s
-Send 75Mbit/s to B
-Send 5Mbit/s to C
Bus Traffic:
-2350 Units at 200Mbit/s from A to B (75Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
Plug Traffic:
Total send/receive: 200Mbit/s
-Sink 75Mbit/s from A
Bus Traffic:
-2350 Units at 200Mbit/s from A to B (75Mbit/s)
-313 Units at 100Mbit/s from A to C (5Mbit/s)
Plug Traffic:
Total send: 20Mbit/s
Total receive: 100Mbit/s
-Sink 5Mbit/s from A
4
IRM
5
C1: Check own Plug
Enter to plug traffic list:
Send 70Mbit/s to C
C2: Capture 70Mbit/s?
C3: OK
C4: Enter to plug traffic list: Sink 70Mbit/s from B
C5: Allocate 4380BW Units
C6: Failed
C7: Delete from plug traffic list: Send 70Mbit/s to C
C8: Cancel (Sink 70Mbit/s from B)
C9: Delete from plug traffic list: Sink 70Mbit/s from B
C10: Read own bus traffic list

Fig. 5(a)

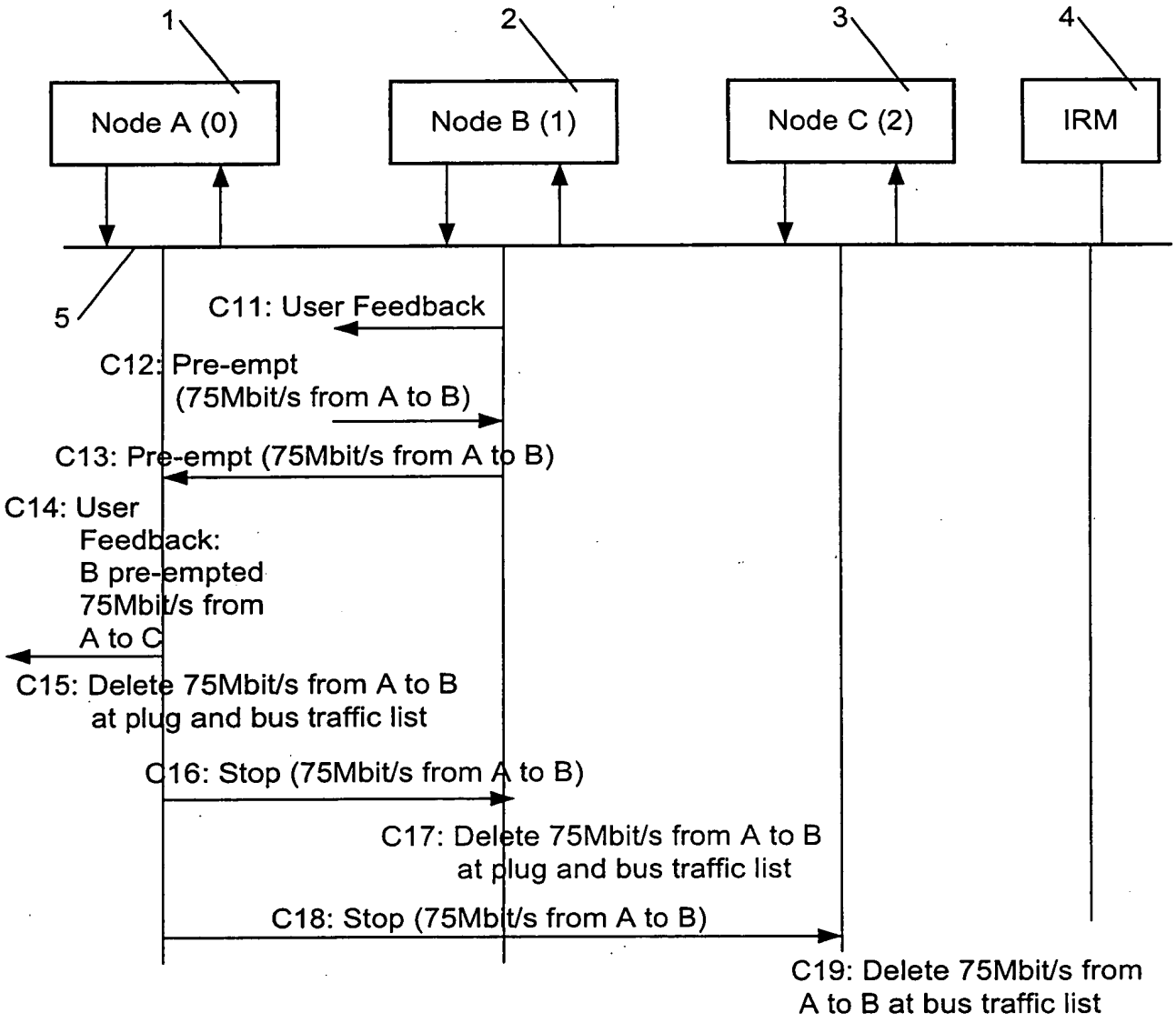
1
2
3
4
Node A (0)
Node B (1)
Node C (2)
IRM
5
C11: User Feedback
C12: Pre-empt
(75Mbit/s from A to B)
C13: Pre-empt (75Mbit/s from A to B)
C14: User
Feedback:
B pre-empted
75Mbit/s from
A to C
C15: Delete 75Mbit/s from A to B
at plug and bus traffic list
C16: Stop (75Mbit/s from A to B)
C17: Delete 75Mbit/s from A to B
at plug and bus traffic list
C18: Stop (75Mbit/s from A to B)
C19: Delete 75Mbit/s from
A to B at bus traffic list

Fig. 5(b)

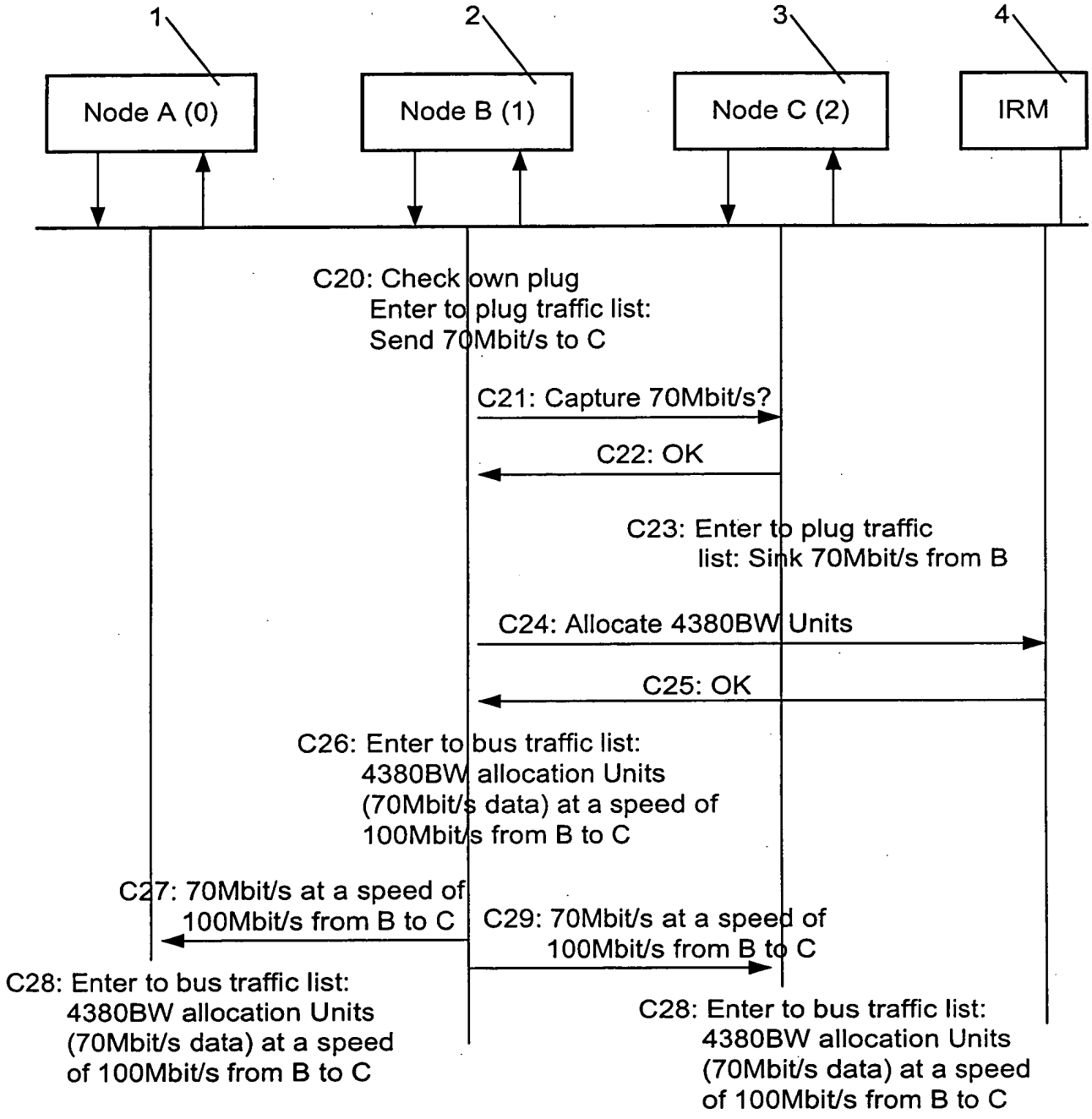
1
2
3
4
Node A (0)
Node B (1)
Node C (2)
IRM
C20: Check own plug
Enter to plug traffic list:
Send 70Mbit/s to C
C21: Capture 70Mbit/s?
C22: OK
C23: Enter to plug traffic
list: Sink 70Mbit/s from B
C24: Allocate 4380BW Units
C25: OK
C26: Enter to bus traffic list:
4380BW allocation Units
(70Mbit/s data) at a speed of
100Mbit/s from B to C
C27: 70Mbit/s at a speed of
100Mbit/s from B to C
C29: 70Mbit/s at a speed of
100Mbit/s from B to C
C28: Enter to bus traffic list:
4380BW allocation Units
(70Mbit/s data) at a speed
of 100Mbit/s from B to C
C28: Enter to bus traffic list:
4380BW allocation Units
(70Mbit/s data) at a speed
of 100Mbit/s from B to C

Fig. 5(c)

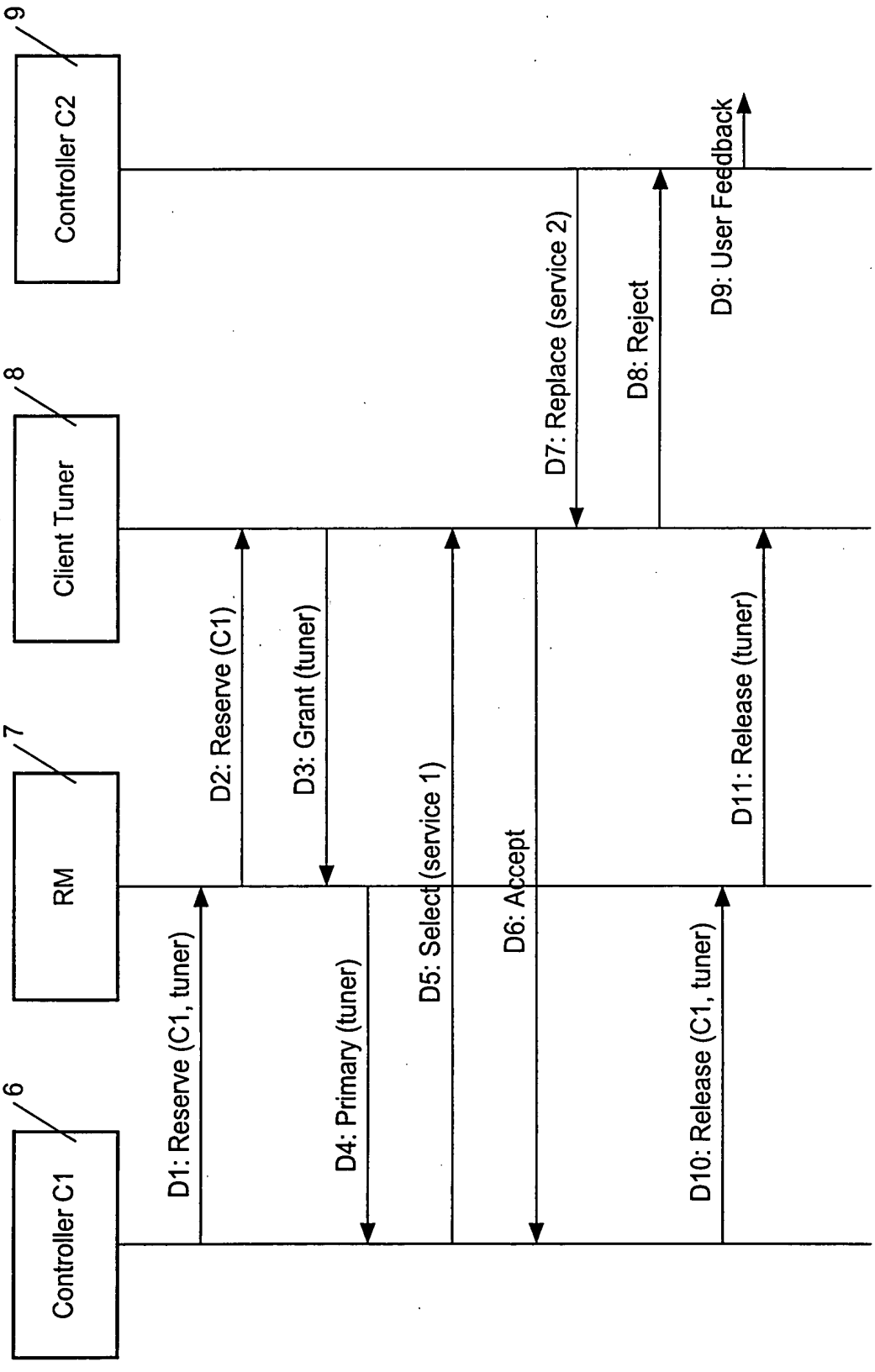
Controller C1
6
RM
7
Client Tuner
8
Controller C2
9
D1: Reserve (C1, tuner)
D2: Reserve (C1)
D3: Grant (tuner)
D4: Primary (tuner)
D5: Select (service 1)
D6: Accept
D7: Replace (service 2)
D8: Reject
D9: User Feedback
D10: Release (C1, tuner)
D11: Release (tuner)

Fig. 6

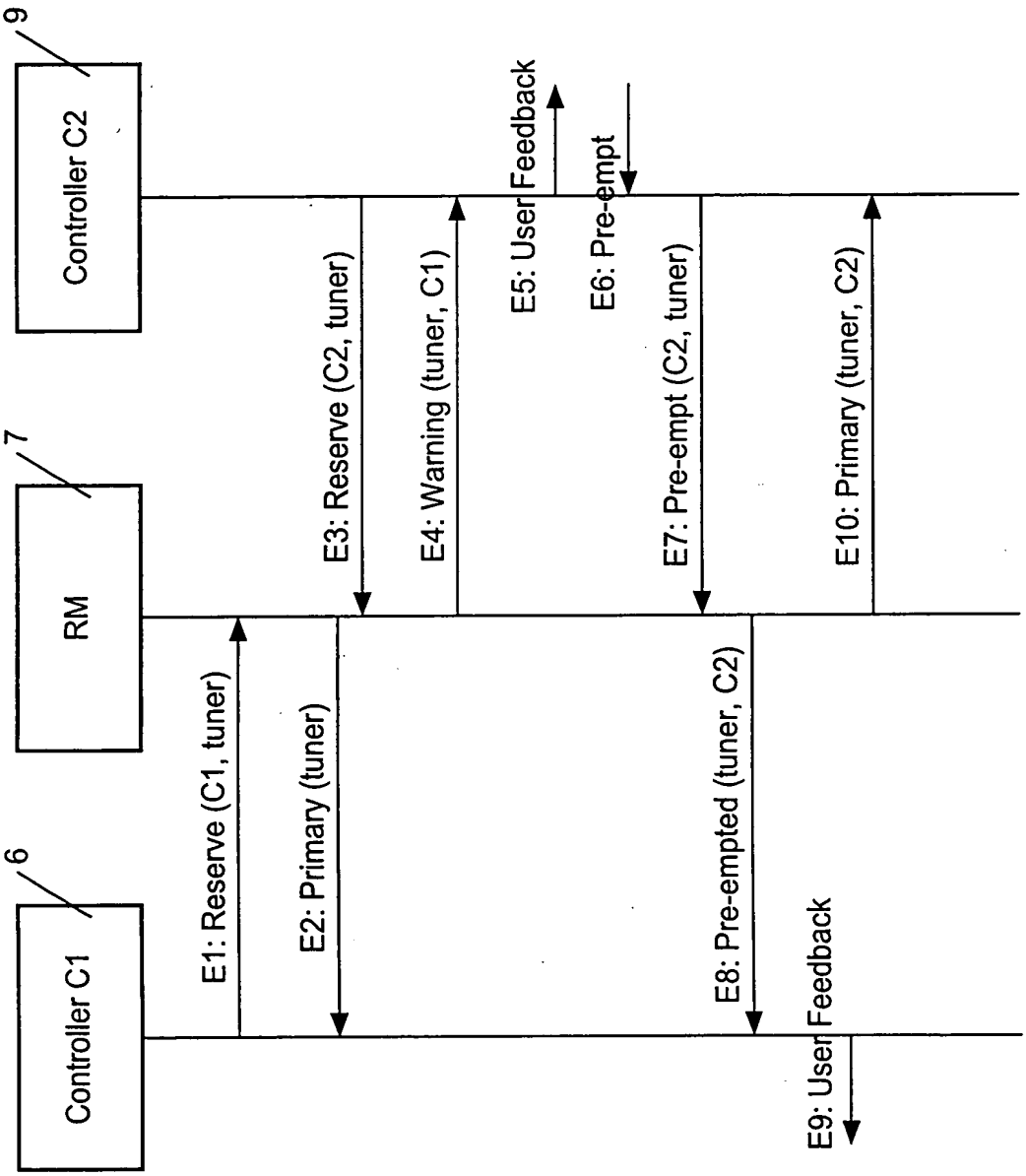
Controller C1
6
RM
7
Controller C2
9
E1: Reserve (C1, tuner)
E2: Primary (tuner)
E3: Reserve (C2, tuner)
E4: Warning (tuner, C1)
E5: User Feedback
E6: Pre-empt
E7: Pre-empt (C2, tuner)
E8: Pre-empted (tuner, C2)
E9: User Feedback
E10: Primary (tuner, C2)

Fig. 7

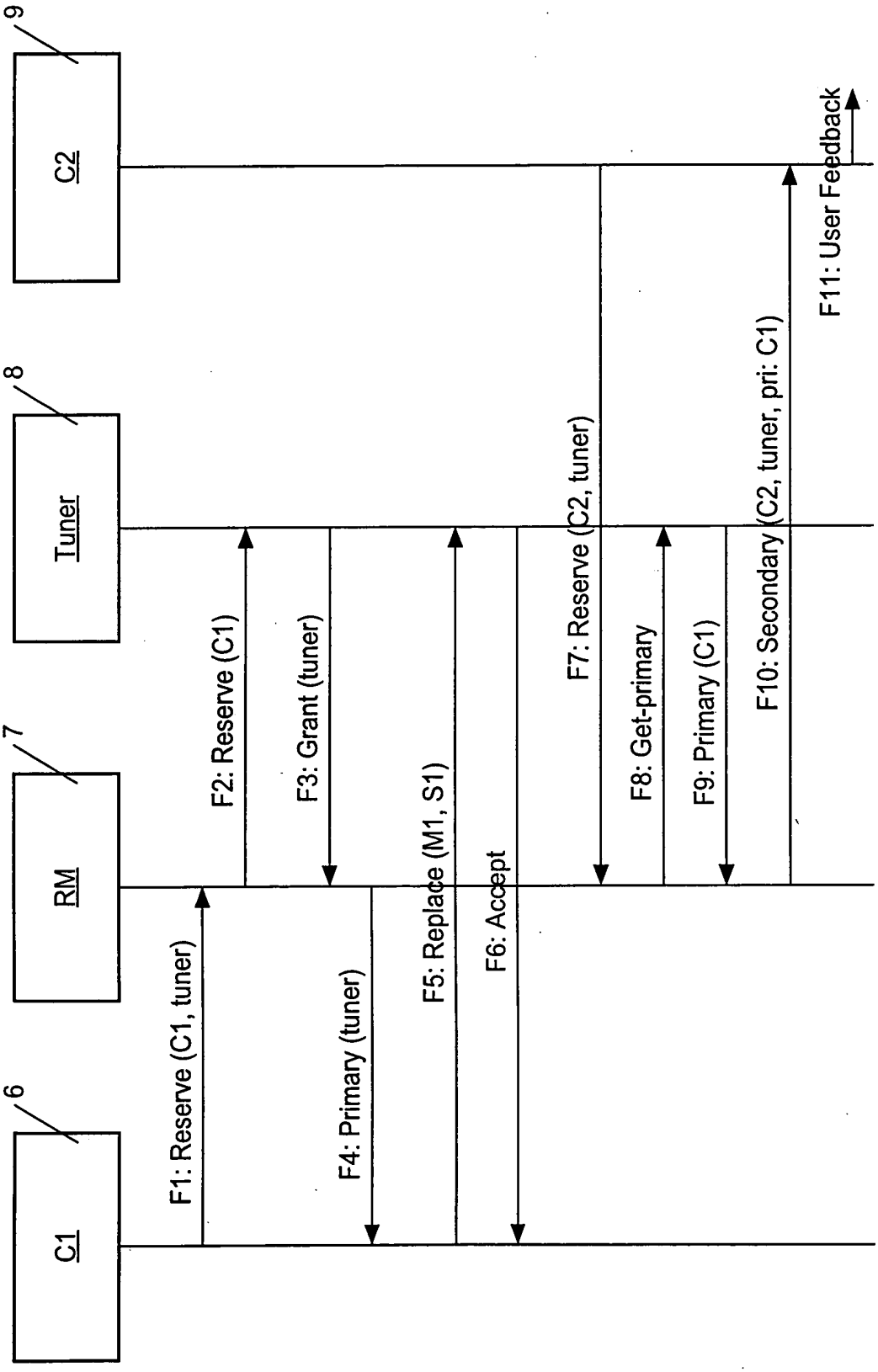
C1
6
RM
7
Tuner
8
C2
9
F1: Reserve (C1, tuner)
F2: Reserve (C1)
F3: Grant (tuner)
F4: Primary (tuner)
F5: Replace (M1, S1)
F6: Accept
F7: Reserve (C2, tuner)
F8: Get-primary
F9: Primary (C1)
F10: Secondary (C2, tuner, pri: C1)
F11: User Feedback

Fig. 8(a)

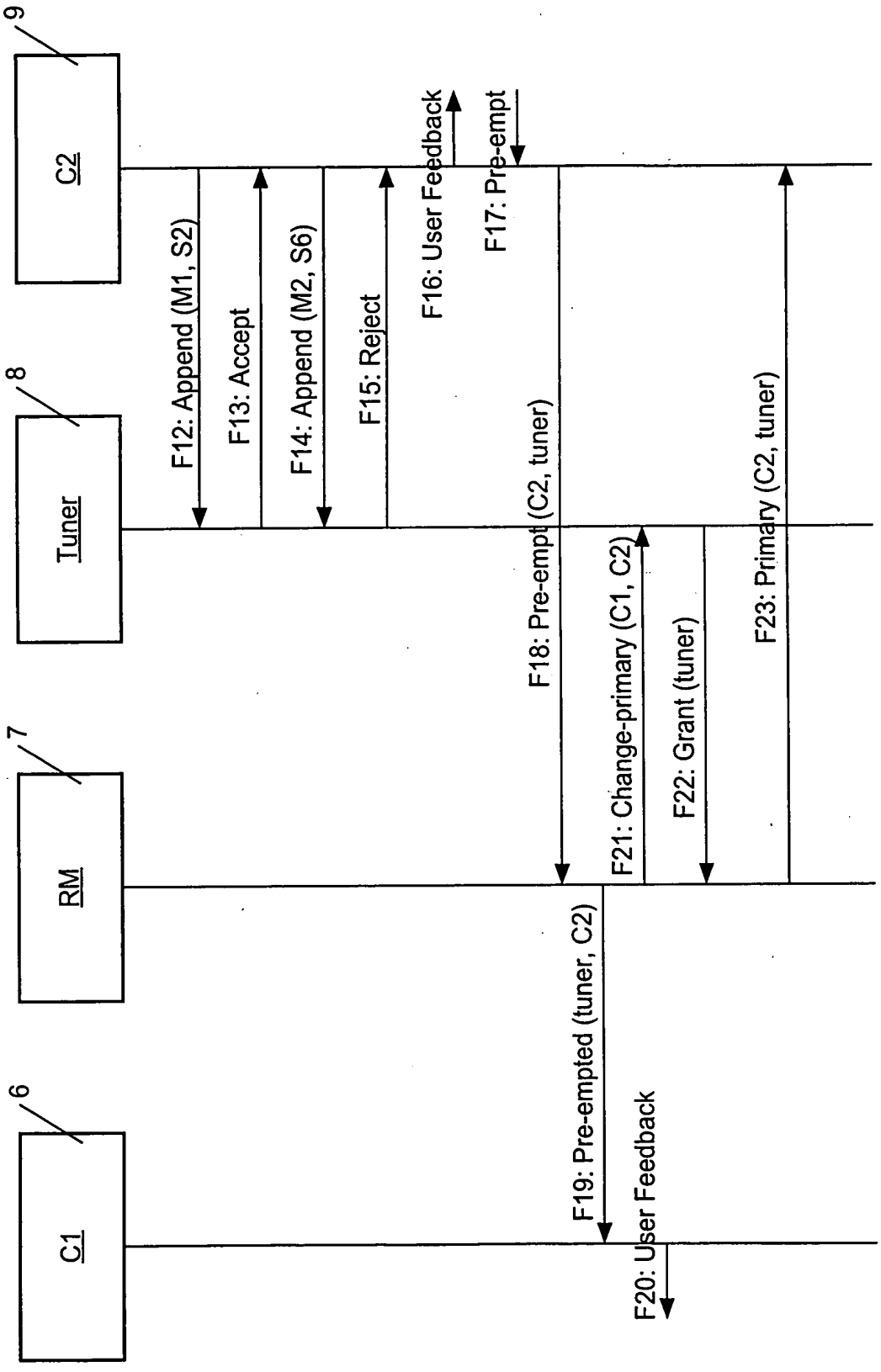
C2
9
Tuner
8
RM
7
C1
6
F12: Append (M1, S2)
F13: Accept
F14: Append (M2, S6)
F15: Reject
F16: User Feedback
F17: Pre-empt
F18: Pre-empt (C2, tuner)
F19: Pre-empted (tuner, C2)
F20: User Feedback
F21: Change-primary (C1, C2)
F22: Grant (tuner)
F23: Primary (C2, tuner)

Fig. 8(b)

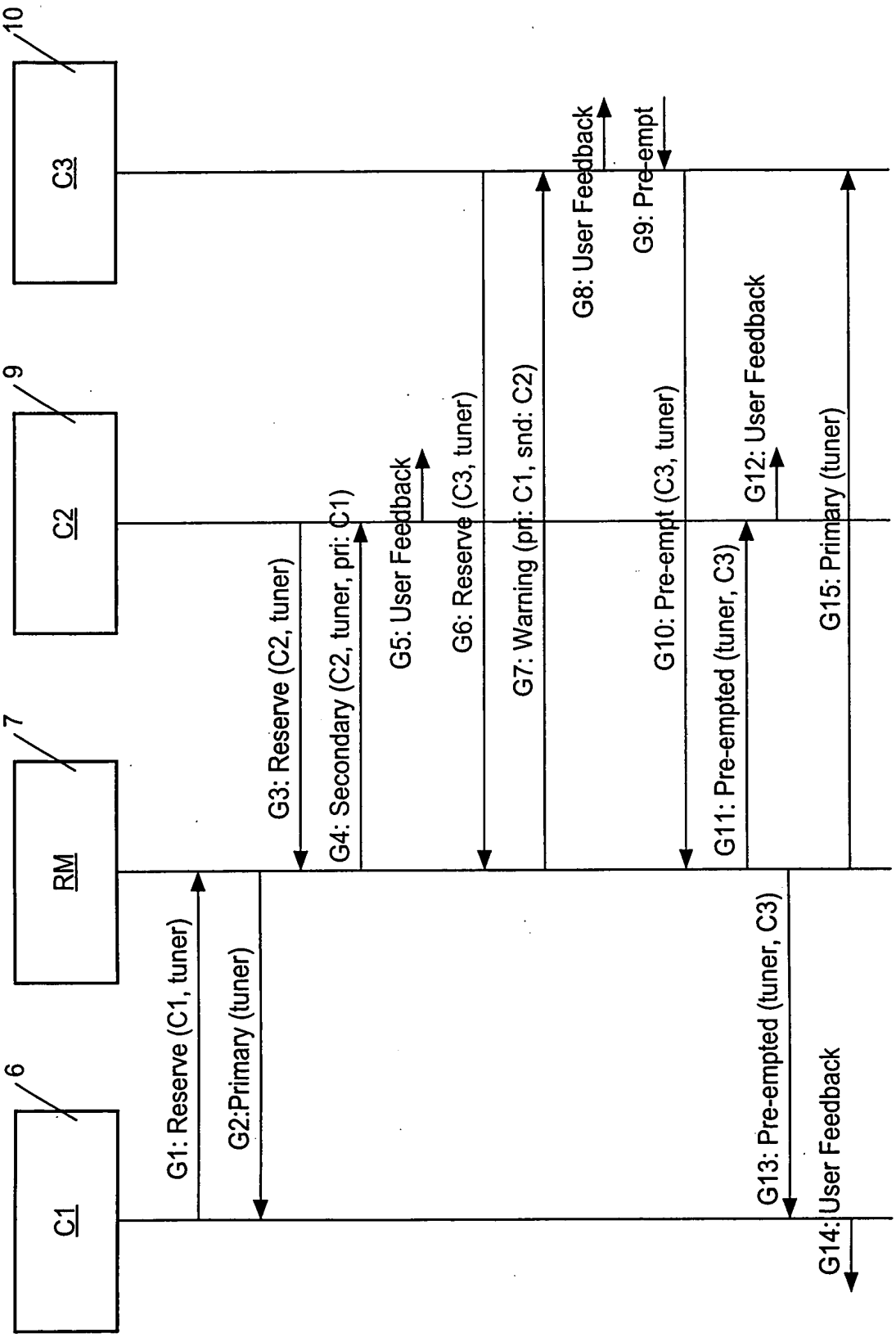
C1
6
RM
7
C2
9
C3
10
G1: Reserve (C1, tuner)
G2:Primary (tuner)
G3: Reserve (C2, tuner)
G4: Secondary (C2, tuner, pri: C1)
G5: User Feedback
G6: Reserve (C3, tuner)
G7: Warning (pri: C1, snd: C2)
G8: User Feedback
G9: Pre-empt
G10: Pre-empt (C3, tuner)
G11: Pre-empted (tuner, C3)
G12: User Feedback
G13: Pre-empted (tuner, C3)
G14: User Feedback
G15: Primary (tuner)

Fig. 9

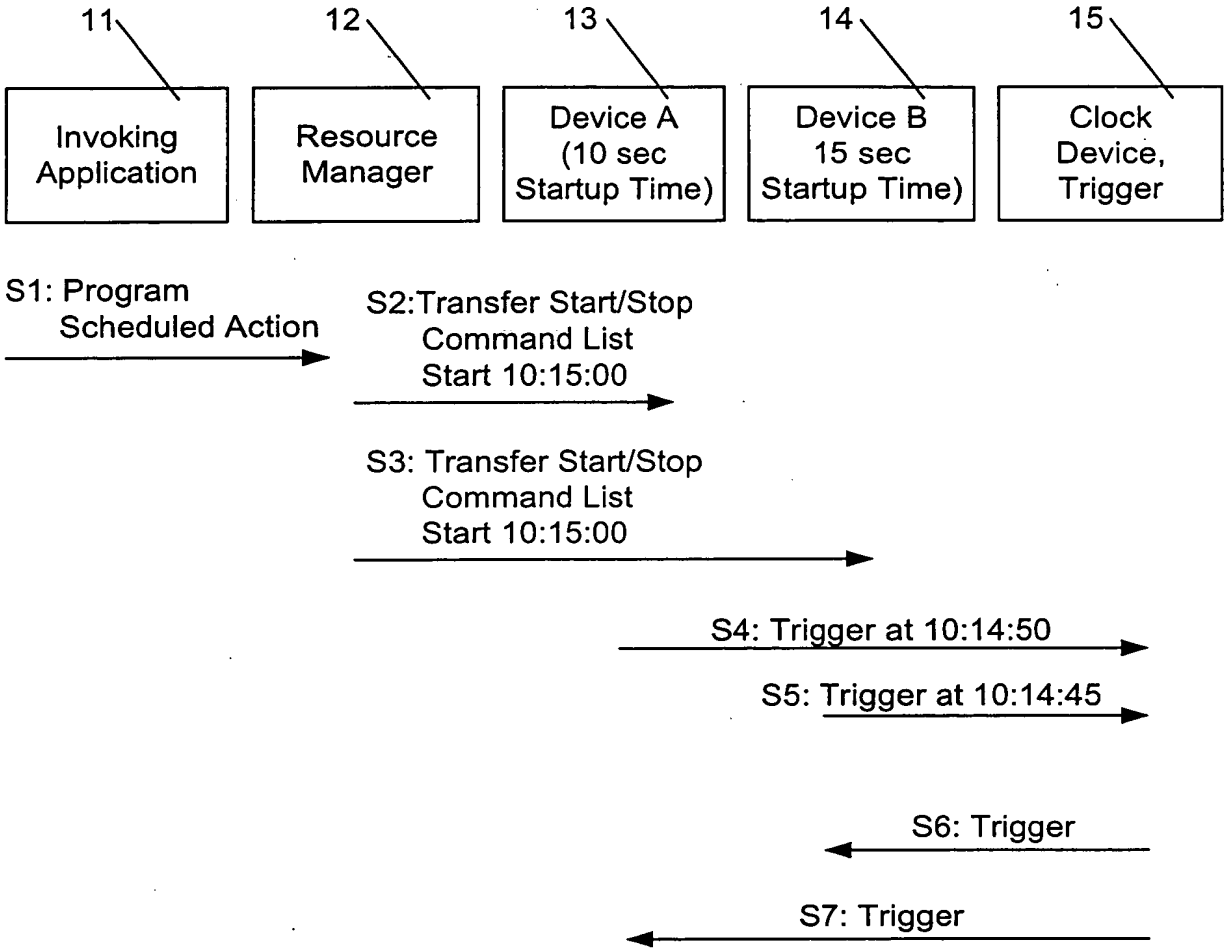
11
12
13
14
15
Invoking Application
Resource Manager
Device A (10 sec Startup Time)
Device B 15 sec Startup Time)
Clock Device, Trigger
S1: Program Scheduled Action
S2:Transfer Start/Stop Command List Start 10:15:00
S3: Transfer Start/Stop Command List Start 10:15:00
S4: Trigger at 10:14:50
S5: Trigger at 10:14:45
S6: Trigger
S7: Trigger

Fig. 10